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BULLETIN NO. 27

BUTCHERING AND CURING MEATS IN CHINA

BY

CARL OSCAR LEVINE

ASSOCIATE PROFESSOR OF ANIMAL HUSBANDRY

CANTON, CHINA

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Preface

This bulletin discusses the different methods, both Chinese and foreign, of butchering and curing meats. The aim has been to present the material in a practical way so as to be of value to the general public as well as of special service in connection with the courses in Meats offered at the Canton Christian College.

The writer realizes that this bulletin is not complete, in that the subject, especially in regard to curing meats in different parts of China, is far from exhausted. However, it is thought best to publish in this form, and in a later edition to include additional material which may be secured on the subject. Constructive criticism on this bulletin will be received gladly.

The writer is especially indebted to the United States Department of Agriculture for permission to use material from its publications. Special acknowledgment is also due to Mr. Taam Sik Hung and Mr. W. L. Funkhouser of the agricultural staff of the Canton Christian College, who have made valuable suggestions in the preparation of the manuscript, to agricultural students who have taken the course in Meats under the writer's supervision and have assisted in securing the data on Chinese methods of curing meats, and to Mr. A. H. Holt, Instructor of English in Canton Christian College, for his assistance in reading the manuscript.

C. O. Levine

Butchering and Curing Meats in China

Introduction

The Chinese, like most people, are lovers of pork, beef, mutton, and poultry, and consume these meats, both fresh and cured, in large quantities each year.

Fresh meat is practically all consumed within a few miles of the locality in which it is butchered. However large quantities of cured meats, especially cured pork and duck, are shipped long distances from the localities where they are cured. Cured hams and bacon are shipped from Kuling north to Peking, and south to Canton. Yunnan exports to Canton and other parts of China, to the Philippine Islands and other countries to the south, a considerable quantity of home cured ham, which is quite popular with the Chinese in those regions. On the other hand, a good deal of cured ham and bacon is imported, chiefly from Australia and England, to the various ports of China and finds its way inland.

For a number of years Canton Christian College has been studying the butchering and curing problems as they exist in southern China, particularly in the region of Canton. Meats of various kinds have been butchered and cured by the College. Both the foreign and Chinese methods of handling the meat have been practiced and studied. In this work special attention has been given to the butchering and curing of pork.

The climate of Canton is one not especially well adapted to curing meat. This is due to the fact that the temperature never falls below 32 degrees Fahrenheit, even in the coldest winter season. Further, this low a temperature is not maintained more than a few days of the winter season, and only at night. Before noon it usually rises to 50 or 60, following even the coldest nights. In spite of the fact that the temperature never gets very low, the work at the College has demonstrated that it is possible to produce good cured meat, if done properly, even without the use of ice. However there is some risk of the meat spoiling without ice, and it is recommended, especially in curing large pieces of meat, such as hams and shoulders, that ice be used to facilitate the cooling of the meat before the cure is applied.

Origin of Meat Foods

Man uses for his meat diet almost all classes of animal life. However, the principal classes of animals that supply the human race with meat food are: cattle, hogs, sheep, poultry, and, in China and southern Europe, the buffalo. In Northern China the camel and in Western China the yak are also used to some extent for food. Such animals as birds (other than poultry), rabbits, fish and other forms of water life, while of importance, do not provide as large a supply of meat food as do the domesticated animals mentioned above.

Food Animals in China

The animals in China from which the main supply of meat comes are swine, cattle, water buffalo, and poultry (including chickens, ducks, and geese).

1. Hogs

Hogs in China are of both the bacon and lard types. The lard type is the most common, except in the provinces of Yunnan, Szechwan, and some regions in central China, where the bacon type is found.

The Chinese lard hogs are characterized by their large, pendulous bellies, sway-backs, light hams, and by their slowness in maturing. They are inferior hogs when compared with the improved breeds of Europe and America, but as a rule are better than the native hogs found in other parts of the Orient. Their large bellies and low backs are largely due to the fact that from the time the pigs begin to eat until they are butchered, all concentrate feeds are given in the form of a very wet swill, and they are allowed to drink all they can hold of such feed twice a day. Such feeding stretches the digestive tract to an abnormal degree, and permanently enlarges the belly and pulls down the back. By giving less water with the feed, and not allowing the pigs to fill up with all they can possibly hold, this abnormal development can largely be prevented. Intelligent breeding for several generations, by mating animals with the most desirable conformation, such as straight backs, wide, deep hams, long, deep bodies, short heads, and short legs, should bring about further improvement. Breeding for fast growing and early maturing animals should also be practiced, as the most profitable feeding is with young animals.

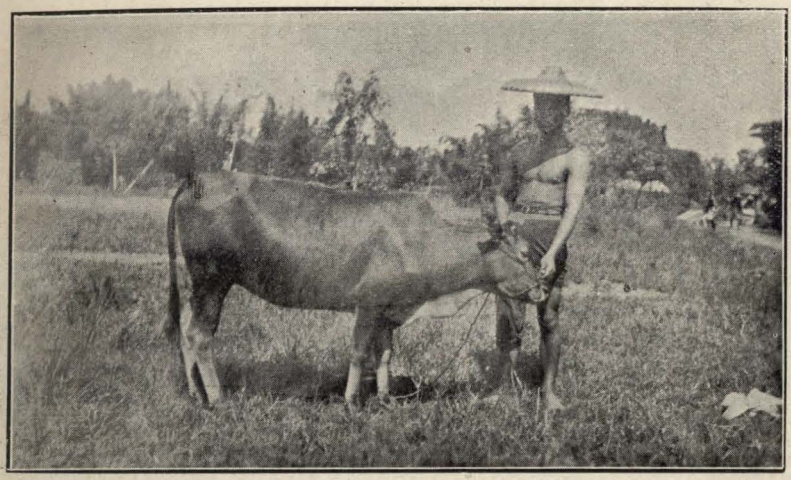


FIG. 1. HEIFER TWO YEARS OLD OF THE NATIVE HUMPED VARIETY

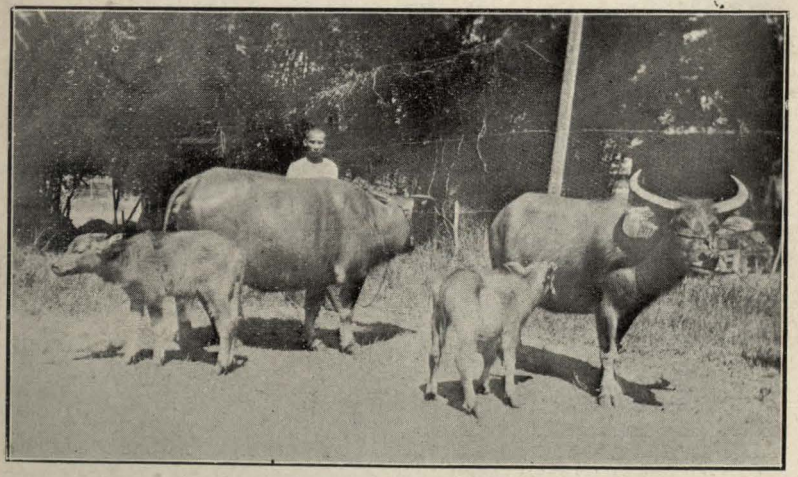


FIG. 2. BEEF-DRAFT WATER BUFFALOS WITH CALVES A FEW WEEKS OLD

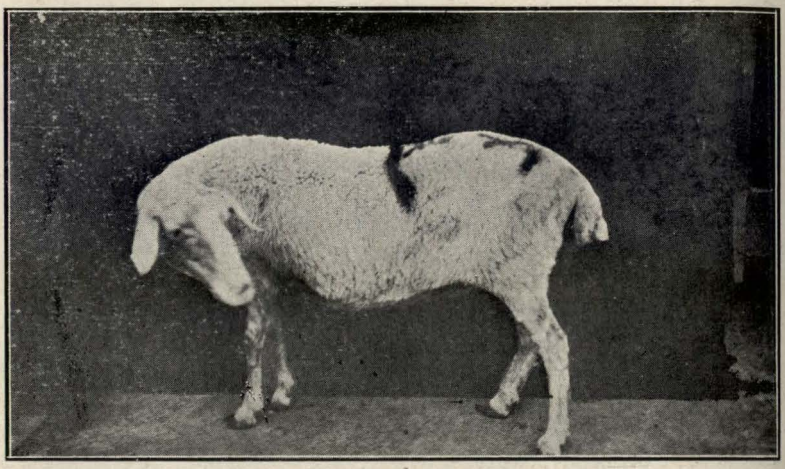


FIG. 3. CHINESE "FAT-TAILED" VARIETY OF SHEEP

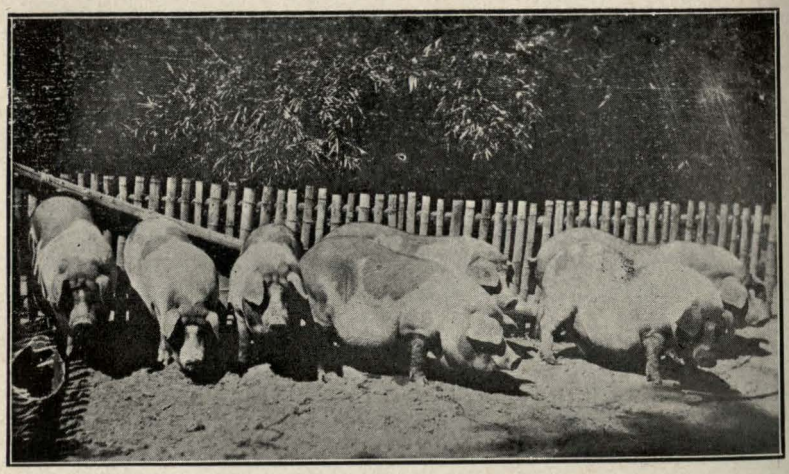


FIG. 4. CHINESE LARD HOGS READY FOR BUTCHERING RAISED AT CANTON CHRISTIAN COLLEGE

It is interesting to note that years ago the native lard hog of southern China was used to secure desirable characters in two of our most important modern breeds, the Berkshire and the Poland China breeds. However, since that time these western breeds have been further greatly improved by intelligent selection and breeding, while the Chinese hogs have been very little improved, if at all. To-day, in comparing the native Chinese lard hog with the modern western breeds, there is no resemblance in the Chinese hog to the wide, slightly arched back, deep, long sides, deep, full hams, small heads, short legs, and rapid growth of these modern breeds which have, in their origin, blood of the native Chinese lard hog.

Due to slow maturity and undesirable conformation, the Chinese hog is not as economical in converting feeds into meat as is the improved western hog. However, the meat is of good flavor and can be successfully cured. An exception to this is the case of animals that have been largely fed on rice bran, which produces a soft, oily pork, although no difficulty is experienced in curing such pork. Wheat bran produces a firm flesh. If a firm flesh is desired, it is important that rice bran or polish not be fed to hogs during the last six to eight weeks of the fattening period.

2. Cattle

The main source of beef in China is the native "humped" cow, called by the people of southern China *Wong Ngau* which means "yellow cow". This native variety of humped cattle is a good beef animal, although there is room for a great deal of improvement by breeding for early maturity, greater size, and development of a more distinctly beef type.

3. Water Buffalo Beef

The water buffalo, while chiefly used for draft purposes, is an important source of beef in China. There is very little difference in quality between the Chinese buffalo beef and ordinary beef. However, the lean meat of the buffalo is considerably darker in color than the lean meat in ordinary beef.

Young stock, up to three years old, that have not been used for draft purposes, are best for beef. Beef from buffalos or cattle that have been used for work for some time before butchering is generally tough, and less palatable than beef from animals that have not been worked.

§ 4. SHEEP AND GOATS

In northern China, especially in the provinces of Shantung and Chihli, the fat-tailed variety of sheep is raised to a considerable extent, both for mutton and for wool. The covering of wool is light, however, when compared with that of the wool breeds, and this sheep is properly classed as a mutton sheep. They are so called because of their large fat tails, which are about three to four inches thick, six to eight inches wide, and eight to ten inches long. Fat-tailed sheep are shipped by rail and by boat to many parts of China from the regions in which they are raised.

The goat, while of less importance than the sheep as a source of meat, is raised in limited numbers in many parts of China for meat purposes. Meat from the goat is considered inferior to that from sheep.

§ 5. POULTRY

The most common of all animal food in China is probably poultry. Many varieties of chickens, ducks, and geese are raised. Some of the best breeds of chickens for meat are the Langshang, from the Shanghai region, of which there are two varieties, the black and the white; and the Swatow, of which there are also two varieties, the white and buff. These breeds are large and meaty, individuals weighing from five to eight pounds. There is a number of other distinct breeds and varieties of chickens, which, while they are not as good for meat as the above, due to their smaller size, are used extensively for food.

In the region of Canton, the common variety of chickens used for meat, and also for egg production, is a small buff-colored variety, generally more or less mixed with other varieties. This variety, which is called *wong kai* (黃雞) by the Cantonese, is becoming very popular in the Philippine Islands, where it is called the "Cantonese" chicken because of its introduction from Canton.

The most common ducks of southern China are of a dark colored variety. In north China the white Peking duck is the common variety. Both are excellent for meat.

There are three varieties of Chinese geese; the grey, white, and brown. The grey variety is probably more generally used for meat than are the other two varieties. It is the only variety raised on a large scale in southern China, and its meat is of excellent quality. Chinese geese are distinguished from other breeds of geese by the fleshy protuberance at the base of the bill and front of the skull.

Selection of Animals for Slaughter

§ 6. Health

In the selection of animals for slaughter health should be given first consideration. Even though the animal has been fairly fed and carries a prime finish, the best quality of meat cannot be obtained if the animal is unhealthy. If the animal has fever or serious derangement of any kind, the meat will not be wholesome. There is little direct evidence of harmful results from the use of animals in the first stages of such dieases as tuberculosis, cholera, plague, rinderpest, and such diseases, but the only safe course is to discourage the use of any animal for food that is known to be in imperfect health. The keeping qualities of meat are always impaired by fever or other derangements of the system. Bruises, broken limbs, and like accidents all have the same effect on the meat as ill health, and unless the animal can be dressed immediately after such accidents, it is best not to use the meat for food. This is especially true if the rise in temperature, which usually results from such accidents, has been 2 degrees F. or more. A rise in temperature just before slaughtering usually results in a stringy, bluish meat, which is difficult to cure. Animals should not be butchered while in heat, as the meat of such animals will be strong, and cannot be cured, as it sours quickly.

§ 7. Condition

First class meat cannot be obtained from animals in poor flesh. The proper amount of fat must be present to give juiciness and flavor to the meat. It is more important, however, that the animal should be in good physical condition than that it should be very fat. "Never kill an animal when it is losing flesh" is a maxim followed by butchers. There is a good deal of truth in the saying. When the animal is losing in flesh, the muscle fibers are shrinking in volume and contain correspondingly less water. As a result, the meat is tougher and drier. When an animal is gaining in flesh, the opposite condition prevails, and a better quality of meat results. Also, a better quality of meat will be obtained from an animal in medium flesh, but gaining in weight, than from a very fat animal that is neither gaining nor losing in flesh.

Before killing, a twenty-five hour fast, plenty of clean water, careful handling and rest, are all important items in securing the best quality of meat, either for cooking fresh or for curing purposes.

Bleeding and Dressing Hogs

§ 11. Tools

The essential tools for doing good work at killing time are: A good sticking knife, a cleaver, a 14-inch steel on which to sharpen the knives, hog hooks, bell-shaped scrapers, meat saw, and gambrel. More than one of each tool is necessary if many hogs are to be butchered and handled efficiently. A block and tackle will reduce labor in hanging the hog for gutting.

§ 12. Scalding Equipment

In China, the water for scalding is heated in a sort of a furnace commonly called *t'ong chue ts'o.* (劏猪灶). The furnace is made of brick and concrete, or concrete only. It is usually about thirty-six inches wide, six feet long, and twenty-eight inches high at one end, gradually sloping to about twenty-six inches high near the other end, where a large brass or iron basin for holding water is placed over a fire grate. The basin in which the water is heated is usually about twenty inches in diameter, eight inches deep in the center, and diminishing in depth from the center to the rim. The shallow basin with large contact with the fire obtains quick heating and saving of fuel. The top of the furnace is made to slope from all sides toward the bowl so that, when hot water is poured on the hog which lies on the table, the water runs back into the basin.

§ 13. Killing the Hog.

All tools and apparatus used in killing and handling the animal should be ready before it is killed. The knives and saws should be sharp and clean. The water should be near the boiling point and the block and tackle ready, if one is to be used.

The common and most satisfactory method of killing the hog is by severing the large arteries and veins in the neck of the animal with a sticking knife about nine inches long. The animal should be laid on its back and held firmly while it is being stuck. Two men



FIG. 5. TOOLS USED BY CHINESE IN BUTCHERING

LOWER ROW RIGHT TO LEFT.

STICKING KNIFE.
CUTTING AND SCRAPING KNIVES.
HEAVY KNIFE FOR CUTTING MEAT.
KNIFE FOR CUTTING BONE.
CLEAVER.
FUNNEL FOR STUFFING SAUSAGE CASING.
HOOK USED IN HANDLING MEAT THAT IS BEING ROASTED.
TOOL USED IN ROASTING MEAT.

UPPER ROW RIGHT TO LEFT.

CORK WITH NEEDLES FOR PRICKING CASING WHEN IT IS BEING FILLED IN ORDER TO LET OUT THE AIR.
HOOKS FOR HANDLING CARCASS.



FIG. 6. HOG SCRAPED AND HUNG UP FOR GUTTING

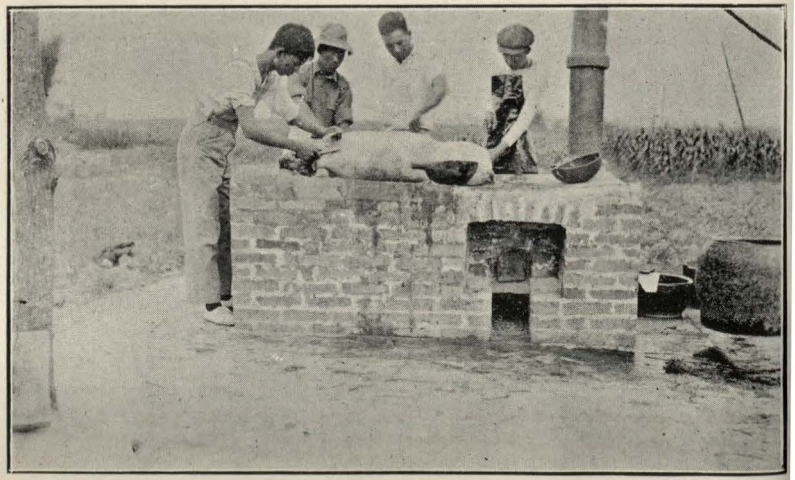


FIG. 7. SCRAPING THE HOG ON THE *"t'ong chue t'so"*

can handle a large hog if they work intelligently. By reaching under the animal and grasping the opposite legs and suddenly jerking the legs, a heavy hog can be easily turned over on its back. One man standing astride the animal with his feet close against its sides, and holding the front legs, can easily control it while the other does the sticking

It is a common custom with Chinese butchers to lay the hog across a narrow bench for sticking. This reguires more handling of the animal then when the animal is simply turned over on its back on the floor, or on a low table or box for the sticking.

The sticking knife should have a blade eight or nine inches long. In America, a knife with straight edges, which at the end tapers to a point is used, while in China, a knife tapering from two inches wide at the handle to a long, narrow point is used. Either type of knife will do. The knife should be thrust diagonally into the neck for about six to eight inches of its length, depending on the size of the hog. It should be inserted on the middle line of the body, about three or four inches in front of the sternum, with the sharp edge of the knife toward the rear and the knife pointed in the direction of the loin of the hog. One hand of the operator should be held on the lower jaw of the hog to help hold the animal steady, It will require a little practice to stick properly. If rightly done, the large blood vessels will be severed, the animal will bleed quickly, and be dead in less than five minutes.

In large packing houses, where each man has a certain piece of work to do, the hogs are hung by one leg upon a moving overhead track. As the hogs move by the killer, he grasps one front leg with one hand, and, with the other hand, does the sticking. Such an arrangement is practical where a large number of hogs is killed daily.

§ 14. "WATERED" MEAT

There is a very common practice in China of increasing the weight of the dressed hog carcass by forcing water into the meat as soon as the blood has drained away and the scraping is finished. Water is forced in through the large blood vessels leading away from the heart. To do this properly, care is taken in sticking not to sever the large blood vessels from the heart. This is accomplished by using a

long, narrow sticking knife, which is thrust into the heart itself. The animal thus stuck bleeds into the chest cavity, which is not desirable, as the bleeding will not be as thorough as when the large blood vessels only are severed. The carcass of the hog may be increased several pounds by this treatment. It is difficult to detect from the appearence of the pork whether or not it has been watered. On roasting, watered meat shrinks more than normal meat. Watered meat will spoil quicker than normal meat, and will not cure well. The practice of "watering" meat should be discouraged.

§ 15. Scalding and Scraping

An soon as the hog is dead, it must be scalded and the hair and scurf quickly removed. The animal is then placed on the top of the *t'ong chue ts'o*. The head and shoulders are scalded first. They should be immersed in the water, which should be from 185 to 190 degrees Fahrenheit. If the water is hotter, the hair will set. Care should be taken to keep the carcass constantly moving by turning it from side to side, in other to get a uniform scald and not to allow the carcass to stay in contact with the bottom of the bowl in which the water is being heated. Occasionally it should be removed from the water and the hair "tried". As soon as the hair and scurf slip easily, the scalding is complete. The hind quarters are scalded in the same manner. The head and feet should be scraped first, as the hair sets on those parts first. Two or three pounds of wood ashes put in the water will help loosen the scurf. Proper scalding and scraping require fast work. If the carcass gets cold before the hair has been removed, the hair will set and have to be removed by shaving with a sharp knife. For scraping, the candle-stick or bell-shaped scraper is best. What cannot be removed with it, can be removed with a sharp, curved knife.

In America when only from one to three hogs are butchered at a time the custom is to heat the water in a large kettle over a stove or out-door fire. The hot water is poured into a barrel which is tipped at an angle with the top of the table, the top of the table being level with the lower side of the top of the barrel. The hog is slid into the barrel, first the head end, and then the rear end. The body is kept in motion by pulling it up and down until it is scalded, and the hair and scurf slip well. This is a quick method of scalding as much of the hog can be immersed in the water at one time, but it requires more labor than does the method of scalding with the *t'ong chue ts'o*.

In large packing houses, the hogs are automatically scalded and scraped, by being drawn through a tube filled with water of the proper temperature. Stiff brushes on the inside of the tube remove the hair and scurf as the hog passes through.

§ 16. Gutting

The entrails of the hog may be removed with the hog lying on a table, as is the common practice in the Canton region. The hog should be propped so that it lies on its back. However, it is more conveniently done with the hog hung up by its hind legs. To hang up the hog requires what is known as a gambrel, which may be simply a strong stick, pointed at the ends, about an inch and a half in diameter and eighteen inches long, a block and tackle, and a secure place over-head, about nine feet high, for attaching one end of the tackle. With a sharp knife, the cords in the hind legs just above the dew-claws are separated from the bone enough to allow inserting the sharpened end of the gambrel, and thus spreading the legs. The gambrel should have a hook or ring in the center for attaching it to one end of a block and tackle. The carcass is then lifted so that the head end clears the floor or ground about four inches. A better and more convenient gambrel may be made of iron and adjustable for hogs of different sizes.

After the hog is hung up, clean water should be poured on it and it should then be scraped clean of all remaining patches of hair, scurf, or dirt. The head should then be removed by cutting through the flesh to the atlas joint where the neck joins the head, cutting entirely around the neck about an inch back of the ears. If the head does not drop off, it can be easily removed by grasping it by the ears and twisting it.

It removing the entrails, first cut through the flesh between the hind legs, to the bone, and split the pelvic bones with a saw or cleaver. Cutting through the bone is easily done if the cut through the flesh is made on the midline between the hind legs, as the bone is very thin at that point. Cut through the flesh down the midline of the belly toward the head, to the breast bone. In doing this, care should be taken not to cut the intestines, which lie just beneath the thick layer of fat meat. By shielding the point of the knife with the left hand and guiding it with the right, there is little danger of cutting the intestines. The entrails are now exposed, and the fat from

around the stomach should be removed. This fat is strong in flavor and should not be mixed with the leaf fat. Cut around the anus close to the tail and strip the rectum from its attachment to the back bone. A string should be tightly tied around the end of the rectum and the urethra so that there will be no danger of the contents of the intestines or bladder soiling the meat. If the animal is a male, care should be taken not to cut the penis in making the cut down the midline of the body and between the hind legs. The penis should be stripped from the fat in which it is imbedded, and thrown over the back of the animal out of the way of the butcher. Then remove the stomach and intestines by cutting across the gullet, after first pulling the gullet up into the chest cavity. Remove the liver from its attachment to the intestines and remove the gall bladder from its attachment to the liver. Care should be taken not to cut the gall bladder. Now cut through the breast bone, beginning at the front end and cutting upward with a knife through the flesh to the bone. The bone is best cut with a saw, and the cut should be made upward. The "pluck", which consists of the heart, lungs, and gullet, is removed by cutting across the artery which can be easily seen running down the backbone, and by cutting around the diaphragm close to the ribs. Split the backbone with a saw to facilitate cooling. In cutting, a knife should always be used for cutting through the flesh before the saw is used. If the saw is used for cutting the meat, the cut surface of the meat will have a rough, unattractive appearence.

§ 17. Cooling the Carcass

As a rule, the butchers in Canton cut up the carcass immediately after gutting. This may be necessary in a warm climate where no ice is used to facilitate cooling, in order to prevent the meat from souring, but the meat handles much better if it is cooled before it is cut up. This may be done during the cold weather of the winter season by butchering in the evening and allowing the carcass to cool over night, or by placing the meat in a refrigerator, at a temperature of from 34 to 40 degrees Fahrenheit. Freshly killed meat absorbs odors very readily and there should be no fresh paint, tar, kerosene, or like substances near the fresh meat.

§ 18. Cutting up the Carcass

After the two halves of the carcass have been cooled, they may be placed on a table with the meat side up. The front legs are

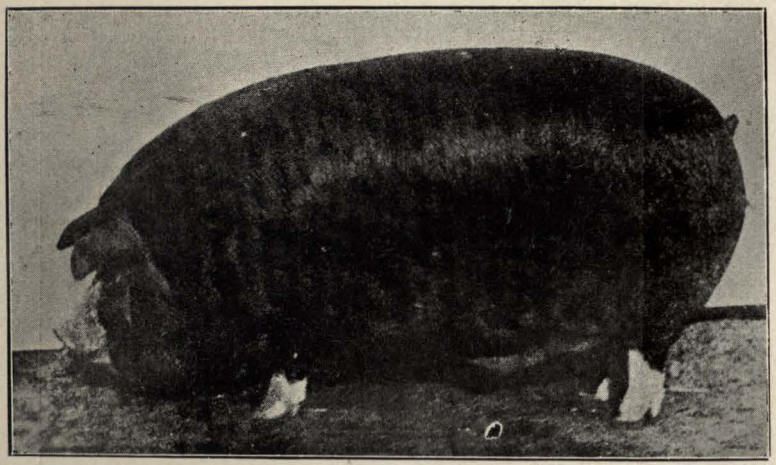


FIG. 8. A GOOD LARD HOG. NOTE THE FULL BACK AND HAMS, SHORT NECK, DEEP SIDES, SHORT LEGS, AND EXCELLENT QUALITY

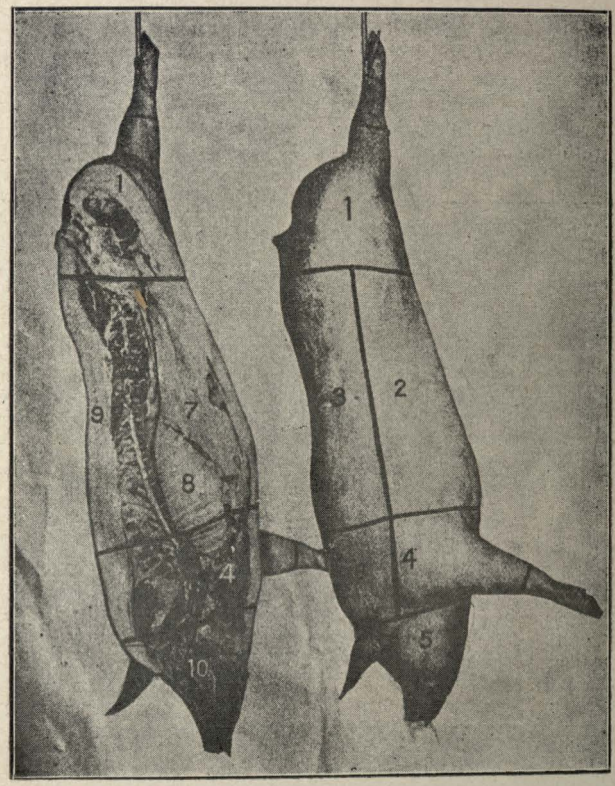


FIG. 9. DRESSED CARCASS: 1, HAMS; 2, BACON; 3, FATBACK; 4, SHOULDER; 5, JOWL; 6, SHOULDER BUTT; 7, LEAF LARD; 8, RIBS; 9, FAT BACK AND CHOPS; 10, HEAD.

removed about an inch above the knee and the hind legs about an inch above the hock. Immediately remove the leaf lard and the kidneys, all in one piece, so as to facilitate cooling, using the hands to strip the leaf lard from its attachment to the sides. Strip out the tenderloin. Divide each half of the carcass into three parts, the shoulders, middle and hams. For cutting through the flesh, a heavy knife with a curved blade is best. A saw should be used in cutting through the bone. Cutting should be across the grain of the meat as much as is possible, in order that the meat will carve better after cooking.

§ 19. Shoulders

The shoulder cut is made between the fourth and fifth ribs, where the ribs leave the backbone. The cut should be made at right angles with the top and bottom edges of the middle piece in order to make a rectangular middle piece. This necessitates a diagonal cut across the end of the fourth rib. If the shoulders are to be cured, remove the ribs and the backbone from the shoulder piece. Cut close to the ribs in removing them in order to leave as much meat on the shoulder as is possible. Cut off the top of the shoulder with about one and one-half inches of the cartilage and bone at the top. This removes most of the fat meat and trims the shoulder for curing. The shoulder should be further trimmed by cutting off rough parts with a sharp knife.

§ 20. Middle Part

Separate the hams from the middle by cutting just back of the beginning of the rise in the backbone. The ribs should be separated from the side meat. If it is desired to make pork chops, care should be taken to leave the long muscle on either side of the backbone attached to the backbone and ribs. The end of the ribs should then be cut off with a cleaver, leaving about three inches of the ribs attached to the backbone to form part of the chops. In preparing the chops for roasting, cuts should be made through the meat between the ribs and between the vertebrae.

It is the custom for butchers in Canton to remove all the meat from the ribs and backbone. The sides are then cut into strips about one inch wide, cutting from the top to the bottom, and used, fresh or cured. The ribs and backbone are then cut into small parts and prepared in a very tasty way with a sweet dressing. The dish prepared in this manner is known as *chue p'aai kwat* (豬排骨).

If the side meat is to be made into cured bacon, the first method of separating the ribs from the meat is followed. This leaves the side meat about one and a half to two inches thick. The strip of pure fat meat along the top, known as the fat back, the strip of belly fat at the bottom, up to, and including the teats, should be removed. The middle piece which is left after thus trimming, is used for making cured bacon. The fat back and the belly strip can be used for lard.

§ 21. HAMS

If the hams are to be cured, all sharp points should be smoothed off, giving a neat, rounded shape to the ham.

§ 22. TRIMMINGS

The small pieces of meat cut from the shoulders, hams, and middle pieces in trimming, may be used fresh, or made into sausage. The fat of the trimmings may be used for making lard.

§ 23. HEAD

The fattest part of the head may be used for lard, or cut into strips about three quarters of an inch wide and cured, or it may be used for making sausage or head chese. The snout, ears, and tongue may be used fresh or pickled.

§ 24. FEET

The small amount of meat on the feet is considered very delicious. The feet may be either cooked for immediate use, or they may be pickled.

Killing and Dressing Cattle

§ 25. Tools

The following tools are necessary for killing and dressing cattle: an ax, an 8-inch sticking knife, a skinning knife, a steel for sharpening the knives, a 28-inch meat saw, gambrel, and a block and tackle for hoisting up the carcass.

§ 26. Stunning

The first step in killing and dressing beef is to secure the animal so that it cannot possibly break loose. A strong halter, or new half-inch rope, tied around the neck and with one end tied to a ring in the floor, or to a tree, works very well. If the animal has a ring or a bar through the nose, as most cattle have in China, it should be further secured by tying with a strong rope attached to the ring or bar. The animal should be tied very short so that it cannot move its head to any extent.

Stunning is done in two ways. One method is to strike a heavy blow with a stunning ax, weighing about three pounds, made especially for the purpose, with an extension head about an inch in diameter which readily crashes through the bone covering the brain, and into the brain itself. The blow should be struck in the center of the forehead. An ordinary ax with a long handle, can be used, although the kind described above is best, in that it is sure to stun the animal, and thus is most humane. The other method which is commonly used in southern China, is to strike just back of the poll, and dislocate the atlas joint. This is just as effective as a blow on the forehead, if the blow is struck with enough force. Water buffalos have a very hard skull and for this reason are sometimes shot. The end of the gun should be held close to the head and carefully aimed at a point in the center of the forehead, where lines would cross if drawn from the base of the right horn to the left eye, and from the base of the left horn to to the right eye.

§ 27. Bleeding

The animal should be bled immediately after stunning or shooting. To do this properly requires practice. With the stunned

animal lying stretched out on the floor, stand at its throat with the back toward its body. Place one foot against the jaw, and with the other hold back the front legs of the animal. Reaching down between the feet, lay open the skin from the breast toward the chin for a distance of about ten inches, using the ordinary skinning knife. Insert the knife with the back against the breastbone and the tip directed toward the spinal column at the top of the shoulders, cutting just under the windpipe, and about five or six inches deep. The vein and the artery cross at this point, and if they are severed, the blood will flow out very rapidly. When the vein has been cut below the windpipe, run a knife in on top of the windpipe and sever the blood vessele on that side also. If stuck too deep, the pleura will be punctured and the blood will flow into the chest cavity, causing a bloody carcass, which is not desirable.

The animal will bleed out if the blood vessels on one side only are cut, but it will bleed more quickly if those on both sides are severed. A little practice is required to do it properly, but when once learned it is not easily forgotten.

Bleeding can be accomplished, but not so rapidly, if the throat of the animal is simply cut, just back of the jaws.

§ 28. Skinning and Gutting

Begin skinning the carcass as it lies on its side, by splitting the skin down the face from the poll to the nose. Skin the face back over the eyes on both sides and down over the cheeks. Cut around the base of the horns, leaving the ears on the hide. Split the skin from the chin down the throat to meet the incision made in bleeding. Skin jaws, sides of neck, and a little distance back of poll. Remove the head by cutting from just back of jaws to the depression back of the poll. The atlas joint will be found at this point, and may be easily unjointed by cutting the ligaments which hold it in place.

The carcass should then be rolled on its back and held there by a small stick about three feet long, with a sharp spike at the ends. One end should be stuck in the floor, and the other end braced against the brisket.

Split the skin over the back of the fore legs from between the dew claws to a point three or four inches above the knee. Skin around the knee and the shin, unjointing the knee at the lowest articulation, and skin clear down to the hoof. The brisket and forearms should not be skinned until the carcass is hung up. Cut across the cord over the hind shin to release the foot. Split the skin from the dew claws to the hocks, and up the rear part of the thigh to a point four or six inches back of the cod or udder. Skin the hock and the shin, removing the leg at the lowest joint of the hock. In splitting the skin over the hock, the knife should be turned down flat with the edge pointing outward to avoid gashing the flesh. While the carcass is stretched flat, it is well to skin down over the rear of the lower thigh, but no attempt should be made to skin the outside of the thigh until the hind quarters are raised. After the legs are skinned, split the skin over the midline from the breast to the rectum.

Begin at the flanks and skin along the midline until the side is nicely started. Then, with a sharp knife held nearly flat against the surface, and the hide stretched tightly, remove the skin down over the sides with steady, downward strokes of the knife. It is important that the skin be stretched tight with no wrinkles in it. Care should be taken to leave the covering of muscle over the abdomen on the carcass. Its presence on the hide is not entirely objectionable, but the cascass looks better and keeps better with it on. In "siding" a beef, it is customary to go down nearly to the backbone, leaving the skin attached at the thighs and at the shoulders. Skin over the buttock and as far down the rump as possible. Care should be taken at all times to avoid cutting into the flesh, or tearing the membranes covering it. If the meat is to be kept fresh for any length of time, mould will form in such cut places and will be hard to clean off. A coarse cloth and a pail of hot water should be handy while skinning, and all blood spots should be wiped from the surface. The cloth should be wrung nearly dry for this purpose, and the less water used the better.

Open the carcass at the belly with a knife and pull the small intestines out to one side. Open the brisket and pelvis with a saw or sharp ax. Raise the windpipe and the gullet and cut loose the pleura and diaphragm along the lower part of the cavity. The carcass is now ready to raise. Make an opening with a knife between the large tendon and the bone just above the hocks. Insert the ends

of a single tree in the openings thus made. Hook one end of a block and tackle in the ring in the center of the single tree and hoist until the hind quarters clear the ground several inches. A gambrel, similar to the one used in hanging up a hog carcass, though larger and stronger, may be used instead of a single tree.

While the carcass is in this position, loosen the rectum and small intestines and allow them to drop down over the paunch. The fat lining the pelvis and the kidney fat should not be disturbed or mutilated. The intestines are attached to the liver, from which they may be separated with a knife. The paunch is attached to the back at the left side. It should be pressed down with sufficient force to tear it loose. Let it roll out on to the ground or floor, and cut off or draw out the gullet. Raise the carcass a little higher and take out the liver, first removing the gall bladder. Remove the diaphragm, lungs, and heart, and finish skinning over the shoulders, arms and neck. Wipe off all blood and dirt with a cloth. Split the carcass into halves with a saw, a cleaver, or a sharp ax. Wash out the inside of the chest cavity with warm water, and wipe it dry. Trim off all bloody veins or any scraggy pieces of the neck, and leave the beef to cool before cutting it into quarters.

§ 29. Treatment of Hides

The skins of cattle represent considerable value if properly treated. To save them in the north where cold weather prevails during the butchering season is not difficult, as they can be rolled up and kept frozen until disposed of. However, in the warm seasons, they should be spread out flat, hair side down, the legs, flanks, etc. stretched, and all parts rubbed thoroughly with salt. Particular pains should be taken to treat the entire surface of the skin. If more than one skin is to be salted, they should be salted one at a time and should be spread one on top of the other, with the hair sides together, and the skin sides together. Where only one hide is handled, the legs and head should be folded in and the hide rolled up. Enough salt should be used to cure the hide thoroughly if it is to be kept for any length of time. Ten to twelve pounds of salt will be sufficient for an ordinary hide.

Killing and Dressing Sheep

Much of the sheepy flavor of mutton comes from the generation of gases in the stomach after the sheep is killed. For this reason, the sheep should always be dressed as rapidly as possible. A platform about eighteen inches high is convenient to work on and aids in keeping the blood away from the body, insuring a cleaner carcass. A clean, dry place is necessary for neat work. Water or blood on the wool makes it very difficult to dress the animal nicely.

§ 30. Stunning and Bleeding

If the sheep is an old one, it may be stunned before bleeding. If a young one, the same purpose is served by dislocating the neck. This is accomplished by putting one hand on top of the head or poll and the other hand under the chin and giving a sharp twist upward. Then lay the sheep on its side on the platform, with its head hanging over one end. Grasp the chin in the left hand and stick a knife through the neek just back of the lower jaw. The cutting edge of the knife should be turned to the spinal column and the cut be made through the flesh to the bone. In this way it is possible to sever the blood vessels without cutting the windpipe.

§ 31. Skinning

Split the skin over the back of the front legs from the dew claws to a little above the knees. Open the skin over the windpipe from brisket to chin, starting it slightly on the sides of the neck. Split the skin over the back of the hind legs to midline, and skin the buttock. The skin should also be raised over the cod and flanks. Skin around the hocks and down to the hoofs, cutting off the hind feet at the toe joints. No attempt should be made to skin the legs above the hocks until after the carcass is hung up. Hang the sheep up by the hind legs and split the skin over the midline. Start at the brisket and "fist off" the skin. This is done by grasping the edge of the pelt firmly in one hand, pulling it up tight and working the other close between the pelt and the body. The "fisting off" should be downward over the fore quarter and upward and backward over the hind quarters and legs. It is unwise to pull down on the skin over the hind legs, as the membrane covering the flesh is sure to be ruptured and an unsightly appearance given to the carcass. The wool should always be held away from the flesh for the sake of

cleanliness. The skin on the legs should be pulled away from the body, rather than toward it, in order to preserve the covering of the meat. When the pelt has been loosened over the sides and back, it should be stripped down over the neck and cut off close to the ears. The head may then be removed without being skinned by cutting through the atlas joint.

§ 32. GUTTING

Begin removing the entrails by cutting around the rectum and allowing it to drop down the inside of the carcass. Do not split the pelvis. Open down the belly line from the cod to the breast bone, and take out the paunch and the intestines, leaving the liver attached to the diaphragm. The heart, lungs and diaphragm may either be removed or allowed to remain in the carcass. Reach up into the pelvis and pull out the bladder. Wipe all blood and dirt from the carcass with a coarse cloth wrung nearly dry from hot water. Double up the front legs and slip over the ankle joint the little cord which is found by cutting into the fleshy part of the forearm.

Bleeding and Dressing Poultry

§ 33. BLEEDING AND PICKING

When only a few chickens are to be dressed, the simplest way of bleeding is to chop off the head with an ax or cleaver. They should be scalded at once and picked. Scalding causes the muscles at the base of the feathers to relax, so the feathers come out easily. After picking, the skin can be made firm by plunging the bird in cold water. The crop and intestines should be removed as soon as the skin is cooled.

If the bird is to be dry picked, it should be bled by cutting the blood vessels in the head and puncturing the brain. For this purpose, a scalpel or a small knife, is used. The instrument must be pointed and very sharp. The bird is grasped by the head with the left hand, and with the right hand the scalpel is thrust upward inside the mouth at the back of the throat. If done properly, the bird will bleed almost as fast as when the entire head is removed.

The knife should be thrust clear through to the brain so the bird will be stunned. Stunning the bird in this way has the same effect as scalding, in that it causes the muscles at the base of the feathers to relax so that the feathers can be easily plucked out. If the bird is not stunned, the feathers will not pull out so readily. The bird should be hung up by the feet and picked immediately, before the body gets cold and the feathers set. A few at a time should be grasped between the thumb and first finger, and the pull should be upward and backward, in the direction which the feathers naturally lie.

Turkeys, geese and ducks are usually bled and dry picked. Immediately after bleeding they should be suspended from a hook and picked, in the same way that a fowl is dry picked.

Owing to the thickness of the feathers on ducks and geese, dry picking with them be is usually a slower process than with other birds. After bleeding, a cloth should be wrapped around the head to catch the blood, so that the feathers will not become bloody. The goose or duck should then be laid on a board on the top of an open barrel or jar, and the feathers dropped into the vessel as they are picked. The coarse wing feathers should be kept separate from the softer feathers. When the feathers have been removed the short down may removed by singeing with a gasoline or alcohol flame. A hot flame should not be used, as it will give an oily appearance to the skin.

When it is not desired to save the feathers, quicker work may be done by scalding the birds and wrapping them for a few minutes in a sack or blanket to steam. Since there is danger of their being steamed too much, they should be closely watched, and, as soon as the feathers come out readily, they are ready to be picked, singed, and then cooled by plunging into cold water. The sudden cooling hardens the skin.

Keeping Meat Fresh

In the sub-tropical climate of Canton, it is difficult to keep meat fresh for any length of time without the use of ice. With a room temperature of 60 degrees Fahrenheit and above, meat will keep fresh but a few hours. If placed in a refrigerator with a temperature of from 34 to 40 degrees Fahrenheit, it will keep fresh for a week to ten days. Dry air should circulate freely through the refrigerator. Moisture in the refrigerator tends to develop mould, which is apt to cause decomposition of the meat. A little decay will soon contaminate a large amount of meat.

In the north, meat may be kept fresh during the cold season by freezing it solid. The carcass may be cut into quarters or smaller pieces and hung in an open outbuilding where it will freeze solid, and remain frozen until the weather begins to warm up in the spring. Whenever a piece is wanted it can be removed with a saw. Rapid thawing of frozen meat greatly injures its flavor. If the meat is thawed out slowly in a cold room, the flavor of the meat will not be injured. Meat can be kept frozen for months if kept in cold room, or in a refrigerator with a temperature below 32 degrees Fahrenheit and with proper ventilation provided.

Curing Meats: American Methods

§ 34. Preparing the Meat for Curing

Meat should be thoroughly cooled before it is cured, or it will spoil. The proper time to begin curing is when the meat is cooled and still fresh. Twenty to thirty hours after killing is the proper time to begin the cure. If salted before the animal heat has left it, the shrinkage of muscles causes a retention of gases, and gives an offensive odor to the meat. The meat should not be frozen, as the cure will not penetrate such meat evenly, and an uneven curing will result. Tainted meat may be cured so that it will keep, but no system of curing will bring back the natural flavor of the meat, if it is once lost.

§ 35. Vessels for Curing

Vitrified clay jars, with straight sides, similar to the jars used for fermenting beans in making soy bean sauce, are the best vessels for containing the meat. These jars, large enough to hold conveniently the hams, shoulders, and sides of two hogs, are best for curing meat for the first time, and the meat can be watched and cared for better in small jars than in large jars containing more meat. In America, where such jars are expensive, it is the custom to use a clean, hardwood barrel for the purpose. One that has been used for syrup or molasses is best. If a kerosene or tar barrel is used, it should be first thoroughly burned out, and used as a water barrel for some time before it is used for meat. Vitrified clay jars are preferred to wooden barrels as they are cleaned more readily. If meat has once spoiled in a wooden barrel, the vessel should not be used again for containing meat. Vessels that are used repeatedly for curing meat should be scalded thoroughly each time before packing with fresh meat.

§ 36. Curing Agents

Salt, saltpeter, sugar or molasses, and a variety of spices are the principal preservatives used in curing meat. Borax, formalin, salicylic acid, and other chemicals are sometimes used. However, as they are considered by many authorities to be injurious to the health, their use should be avoided. Baking soda is used in wet pickles to check the growth of mould.

When salt alone is applied to meat, it draws out the meat juices and contracts the muscle fibers, making the meat very hard and dry. The action of the sugar or the molasses is to soften the muscle fibers and improve the texture and flavor of the meat, hence the combination of sugar and salt make a good cure. Saltpeter is used to preserve the natural red color of the meat. It should be used in small quantities only, as it is very astringent, and, if used in large quantities is apt to be injurious to the health.

Wet and Dry Cures Compared

A wet cure is more convenient than a dry cure. It is less trouble to pack the meat in a jar or barrel and pour on the prepared wet pickle than it is to go over the meat three or four times and rub in the spices. The brine method also gives protection from insects. However, in warm weather, the brine has to be watched very closely, and, if mould forms on the surface of the pickle, it should be removed

every day or two. The brine also needs to be recooked every week or ten days in warm weather to prevent undesirable bacteria from growing in it. A cool, dry room is the best for either brine or dry curing. In a dry atmosphere below 60 degress Fahrenheit there is very little danger of the meat becoming sour, although a temperature below 40 degrees is better.

Recipes for Curing

§ 37. Corned Beef

Any piece of beef can be used for corning, but the cheaper cuts are the parts generally used for this purpose. The plate, rump, and parts of the chuck are generally used, although the ribs, loin, and round may also be used. The pieces for corning should be cut into pieces of convenient size, say four or five inches square. If they are cut much larger, they well not cure very well as the pickle will not work in soon enough. They should be cut as nearly the same size as is possible so they will pack in even layers in the barrel or jar.

When as the meat is thoroughly cooled, it should be corned as quickly as possible. Weigh the meat and allow 10 pounds of salt for each 100 pounds of meat. Sprinkle a layer of salt a half inch deep over the bottom of the jar in which the meat is to be placed. Rub each piece of meat with good, clean salt. Pack each layer of meat closely in the bottom of the jar, and sprinkle a layer of salt one-fourth to one-half inch deep on each layer of meat before the following layer of meat is placed in the jar, and cover the top layer of meat with a good layer of salt. After it has stood over night, cover with a brine made as follows: for each one hundred pounds of meat, use four pounds of sugar, six ounces baking soda, and eight ounces of saltpeter. Dissolve in a gallon of water that has been boiled and cooled until it is tepid. Three gallons more of boiled, tepid water should then be added. Meat from fat animals makes choicer corned beef than that from poor animals. Under no circumstances should meat be corned while it is frozen.

In case of more or less than one hundred pounds of meat to be corned, make the brine in the proportion given. The meat should be weighted down with a board and stone so that all the meat is well beneath the surface of the brine. In case any of the meat projects above the surface, decay will commence in a short time.

It is best to cook the brine, or the water used in making the brine solution. If the weather is warm, the brine is apt to get sour and ropy. In that case, wash each piece of meat in cold water, scald the vessel and repack in a new brine. If the brine is reboiled every few days before it gets ropy, it is not necessary to make new brine so frequently. To test the brine for freshness, dip the fingers into it, and if it does not drip freely from the fingers, but appears stringy or ropy, it should be turned off, the meat washed, and new brine added. In the spring of the year, the brine should be watched closely, as it is more likely to spoil at that time than during the cold winter months. If kept in a cool place, with a uniform temperature of below 50 degrees Fahrenheit, and above freezing, there should be little trouble from this source. To secure thorough corning, the meat should be kept in the brine for-twenty eight to forty days, the exact length of time depending on the size of the pieces of meat and on the weather.

§ 38. Dried Beef

The round and shoulders are the parts most commonly used for dried beef. The pieces should be cut with the grain, so that the muscle fibers will be cut crosswise when the dried beef is sliced for table use. It should be cut in about the same sizes as for corned beef, and packed in vessels in the same manner. The pickle should be made as follows: for each one hundred pounds of meat, weigh out six pounds table salt, three pounds of granulated sugar, and two ounces of saltpeter. Mix theses pieces thoroughly. Before the meat is placed in the jar, each piece should be well rubbed with the spice mixture. Dissolve the remainder of the spices in four gallons of boiled water that has been allowed to cool. Pour this pickle solution over the meat in the jar until it is completely covered. Weight the meat down, as in the case with corned beef. The pickle solution should be watched and, in the case of tendency to become ropy, should be handled as in corning beef.

After ten days, the meat should be removed from the pickle and hung up in an airy out-house to drip and dry. When dry, which should be in about 24 hours, it can be smoked, as in the case of smoking ham. The drier the climate, the more easily can the meat be dried and smoked. It is difficult to dry and smoke meat in the Canton region unless done in December and January, before the rains begin.

§ 39. Plain Salt Pork

Rub each piece of meat with fine common salt and pack closely in a barrel. Let stand over night. The next day, weigh out twelve pounds of salt and three ounces of saltpeter to each one hundred pounds of meat, and dissolve in four gallons of boiling water. When cold, pour this pickle over the meat, cover and weight down to keep the meat under the brine. The meat will pack best if cut into pieces about six inches square.

§ 40. Dry Cured Pork

For each one hundred pounds of meat, weigh cut eight pounds of salt, two pounds of granulated sugar, and two ounces of saltpeter. Mix thoroughly, and rub the meat once every three days, using a third of the mixture at each rubbing. Keep the meat on a shelf, or in a vessel, while curing. After the last rubbing, allow the meat to remain in a vessel for about ten days, when it is cured and ready to smoke. To cure nicely, it is desirable to have a cool and rather moist place in which to keep it.

This recipe should not be used where the meat must be kept in a warm dry place, as the preservatives will not penetrate easily and uniformly under such conditions.

§ 41. Sugar Cured Pork

Rub each piece with salt and allow to remain over night. A wet pickle, or brine, may also be forced into the hams and shoulders close to the bone with a special pump, using from 5 to 10 ounces of the pickle or brine for each piece, the amount depending on the size of the piece. The following morning pack in a vessel with the hams and shoulders at the bottom and the bacon on the top. For each one hundred pounds of meat, weigh out eight pounds of salt, two pounds of brown sugar, two ounces of saltpeter, and one half pound baking soda. Dissolve all in four gallons of water, and cover the meat with this wet pickle. In warm weather, the pickle should be boiled and thoroughly cooled before using. A board and stone should be used to weight down the meat. Bacon strips should remain in the pickle from three to four weeks, and the hams and shoulders five to seven weeks, depending on their size. If desired, the meat may then be smoked. Before being smoked meat should be soaked for several hours in clean water at about 80 degrees Fahrenheit to remove the

excess salt on the surface of the meat and thus make the meat more palatable. In soaking the meat about one-half pint of water should be used for each pound of meat.[1] The Canton Christian College has had very good success with this cure.

§ 42. Pork Sausage

Pork sausage should be made from clean, fresh pork only. The parts generally used are the shoulder, neck, and lean meat trimmings. About three pounds of lean meat should be used to one pound of fat meat. Mix the fat and lean meat together in chopping. With some cutters it is necessary to run the meat through twice in order to make it fine enough and to mix thoroughly the lean with the fat meat. After it has been cut the first time, spread thinly and season. For each 100 pounds of meat, use one and one-half pounds of pure, fine salt, four ounces of ground black pepper, and two pounds of pure leaf sage, rubbed fine. The seasoning should be sprinkled over the meat, and the meat again run through the cutter, in order to mix the spice thoroughly with the meat. For immediate use, the sausage may be packed away in jars. It may be kept for some time in a jar if melted lard is poured over the top, so as to exclude the air. The sausage may also be stuffed into muslin bags about two inches in diameter. If the stuffed bags are coated with paraffin, they will keep for some time.

§ 43. Mixed Meat Sausage

Mixed sausage may be made from a mixture of pork and beef in almost any proportion. Sausage should not contain too much fat. A good proportion is two pounds of lean pork, one pound of fat pork, and one pound of lean beef.

§ 44. Bologna Sausage

To each ten pounds of lean beef, use one pound of fat pork or bacon. Chop finely and season with three ounces of salt, two ounces pepper, and a little ground coriander. Stuff casing, and tie every ten or twelve inches. Hang the stuffed casings straight. Smoke for ten or twelve hours. Cook in boiling water until the sausage floats. Dry on clean hay or straw in the sun and hang away in a cool place until wanted.

1 For further details on smoking, see sections 55 to 61.

§ 45. Blood Sausage

Blood sausage is made with the following ingredients: 25 pounds of cured pork or shoulder fat, seven pounds cured fat skins, six pounds of blood, one-half pound onions, one pound salt, one-half ounce white pepper, one ounce sweet marjoram, and one-half ounce cloves.

Cook the fat for one hour and the skins two hours at a temperature of 200° Fahrenheit. When cooked, put through a grinder, grinding quite fine. Then add the blood and seasoning and mix thoroughly. Stuff into large beef casings and boil in the same water in which meat was cooked until the sausage floats. Then dip the sausage in cold water and hang up to cool.

§ 46. Smoked or Country Sausage

The following ingredients are used in making smoked or country sausage: 85 pounds lean pork, 15 pounds beef, one and one-half to two pounds salt, four ounces black pepper, and one ounce sweet marjoram.

Cut the meat into small pieces and sprinkle seasoning over it. Then grind finely. Put away in a cool place for twenty-four to thirty-six hours, then add a little water, and stuff into hog casings and smoke in a very cool smoke until a dark mahogany is obtained.

§ 47. Frankfort or Vienna Sausage

This popular sausage is made with the following ingredients: 70 pounds beef, 30 pounds fat pork, 20 pounds water, one and one-half to two pounds salt, two ounces red pepper.

Cut the beef into small pieces, salt, and allow it to cure for forty-eight hours in a cool room. Cut the pork into small pieces and put the beef and pork through a grinder together. Put into a vessel and add the water and spices. After it is all mixed, put it through a grinder again and grind fine. Stuff into sheep casings. Then, by means of the forefinger and thumb, press the stuffed casing together about four inches from one end, and give this first link two or three twists. Do the same about every four inches, twisting each succeeding link in the opposite direction from the preceding link, in order to prevent untwisting. Then hang in a smoke house for about two hours at a temperature not to exceed 125° Fahrenheit. After smoking, boil for five or ten minutes, then plunge into cold water and hang in a cool place.

§ 48. Liver Sausage

Odds and ends, resulting from trimming up the various cuts of the hog carcass, as well as the liver itself, can be used in making liver sausage. If the head is used, it should first be cleaned, as for headcheese. The jowl, which is practically all fat, may be cut off and made into salt pork, or used for rendering lard. The remainder of the head meat, trimmings, liver cut into slices, and some beef or veal, if such meat can be had, should be boiled. Skin that is free from hair, and from which the fat has been removed, is also sometimes used. The skin will cook before the meat, so it should be put in a cloth sack and removed when thoroughly cooked. Liver cooks in a very short time, and should be removed before the rest of the meat. The meat should cook until it readily falls from the bones. All the meat should then be ground in a meat grinder. For 40 pounds of meat, use one and one-half pounds salt, three ounces sweet marjoram, one ounce allspice, one ounce black pepper, and about one gallon broth in which the meat was cooked. Garlic or onions can be added, if desired. The seasoning should be well worked into the meat. It can then be put into jars, covered with paraffin, or stuffed into beef casings or rounds. When stuffed into casings or rounds, it should be cooked in the same water the meat was cooked in until it floats. Then it should be placed in cold water until the sausage is thoroughly cooled.

§ 49. Summer Sausage

Summer sausage is made with the following ingredients: 25 pounds cured beef free from sinews, 15 pounds pork trimmings, four to six ounces white pepper, one ounce whole black pepper, and one ounce whole mustard seed.

This sausage can be made in cold weather only. All the meat is put through the grinder, and spices added. No salt is needed as the cured beef is salty enough. Mix it all thoroughly until it is evenly seasoned. Spread it out in a cool place for thirty-six to forty hours. Then stuff into hog casings and let it hang over night. Smoke with cold smoke for several days. If kept in a dry place, it can be kept the year round. It if gets moldy, simply wipe off the mold before using.

§ 50. Headcheese

The head of the hog, and trimmings, are used for making headcheese. The head should be shaved clean and nostrils cut off just in front of the eyes. Cut out the eyes and ear drums. The fattest part of the head is generally used for lard. Clean the head by soaking it in water for some time to extract all blood and dirt. After the head is thoroughly cleaned, cover with water and boil until the meat separates from the bones. Lungs and heart may be cooked with the head. When it is thoroughly cooked, take out the meat, saving the liquor for future use. Chop the meat finely. Season with one and one-half pounds salt, three ounces black pepper, four ounces allspice, and four ounces ground cloves, together with two gallons of the liquor for every 50 pounds of meat. The mixing should be done thoroughly, so that proper seasoning is secured. Stuff the meat into large beef casings thoroughly cleaned, hog stomach, or muslin bags about three or four inches in diameter. After stuffing into casings, it should be boiled until it floats on the top, then place in cold water for a short time. Store away in a clean, cool place on a shelf or table. If there are no casings or muslin available in which to stuff the meat, it can be kept in shallow pans.

§ 51. Scrapple

The head and feet of hogs are generally used in making scrapple, but scrapple can be made from any hog meat. The heads should be split through the middle and placed in a kettle with sufficient water to cover them. They should be cooked until the meat falls from the bones. Drain off the broth. Separate the bones from the meat, then chop the meat fine and add it to the broth, and boil. Corn meal should be added until it is as thick as mush. Add the corn meal slowly and stir vigorously, so as to avoid lumpiness. Stir the mixture well for ten or fifteen minutes, and allow it to boil one hour. Pour the scrapple into shallow pans or molds. When cold, it should be sliced and fried.

§ 52. Snow Packing

Snow packing is a method that can be used only in localities where snow and continued dry cold weather prevails during the winter months. The carcass shold be cut into steaks, roasts, and boiling pieces. All trimmings for the table should be made before freezing the meat. Lay the pieces out to freeze. Be sure they freeze solid

to the center. In the bottom of a box large enough to hold all the meat, pack a layer of snow. Put in a larger of the frozen meat, packing in such a way that the pieces do not touch each other. Cover with a layer of snow, and continue with alternate layers of meat and snow. Set the box in a room where it will not be subject to changes in temperature. For convenience, it is well to pack the steaks in one section or end of the box, and the roasts and stews in another. The meat will then be but little disturbed when a supply is taken from the box. Only snow should be used in packing. Be sure the meat is frozen solid before packing, and it will keep through the winter, unless the weather gets very warm. In preparing the meat for the table, it should not be thawed out too rapidly.

§ 53. Partial Cooking

Partial cooking and packing in jars is a method of preserving meat which is sometimes used on the farm. It has the advantage over snow packing in that it can be done in warm weather and is a most satisfactory way of keeping fresh pork. However, it requires considerably more work than other methods of preserving meat.

The loin and side meat, or any part of the carcass, may be used. Cut into slices about one-half inch thick, and fry until a little more than half done. Pack the slices in a jar and cover with hot lard. As the meat is wanted, it can be removed from the jar and warmed up. If the jar is to stand any length of time without using, after it has been opened, it is best again to cover the top with lard. It is better to use several small jars than one large one. They should be kept in a cool, dark room to insure safe-keeping of the meat.

§ 54. Rendering Lard

The leaf lard, fat back, and fat trimmings from the hams, shoulders and neck make good lard. Intestinal fat should never be mixed with the other fat parts, as it makes a strong smelling lard of an inferior grade, but should be rendered by itself. By thorough washing and soaking in cold water for several hours, part of the offensive odor will leave it.

First of all, remove the skin from the fat trimmings. To do this, place the meat on a table, skin side down, and cut the fat from the skin, using a strong knife. When a piece of skin large enough

to grasp is freed from the fat, take it in the left hand, and, with the right hand, insert the knife between the skin and fat. Pull the skin and cut with the knife slightly slanted downward. With a little practice, the fat can be cleanly removed from the skin in this way with one clean cut of the knife. The strips of fat should then be cut into cubes of one to one and one-half inches, making them about equal in size so they will try out evenly.

Pour into the kettle about a quart of water or melted lard, and then fill it nearly full with the cubes of fat meat. The fat will then heat properly and the lard will be brought out without burning. Keep a moderate fire until the cracklings are brown and light enough to float. Frequent stirring is necessary to prevent burning. When done, remove from the fire and allow to cool slightly. Then strain through a muslin cloth into a jar. Stir it occasionally, until it is cool enough to begin to solidify. Stirring while it is cooling tends to whiten the lard and make it smoother. A quarter of a pound of saleratus added to each one hundred pounds of fat has a like effect.

When removing lard from a container for use, take it evenly from the surface. Do not dig down into the center of the lard, for when this is done, it will leave a coating of lard around the sides of the container which will become rancid very quickly by the action of bacteria in the air.

§ 55. Smoked Meats

The process of smoking helps to preserve meat, and, if smoked properly, and with the right kind of fuel, adds a desirable flavor to meat. The creosote formed by the combustion of the wood closes the pores to some extent, and excludes the air. This also helps to keep out the insects.

§ 56. The Smokehouse

The size of smokehouse to build depends on the amount of meat that is to be smoked. In a house eight feet square and ten feet high, the hams, sides, and shoulders of three to five hogs can be smoked at one time. Ventilation should be provided to carry off the warm air in order to prevent overheating the meat. A chimney, made by placing a six inch tile in the roof, makes a good ventilator. The smoke house walls may be built of lumber, brick, or concrete.

Lumber would be the cheapest, but least permanent, and concrete the most costly. Brick is no doubt the most satisfactory material for a small smoke house in southern China. Mud bricks may be used, but burnt clay bricks are more lasting. The roof should be made of tile. The best material for the floor is large square tiles, called in Chinese *taai ch'uen* (大磚). Concrete or brick may also be used, but would be more expensire then *taai ch'uen.*

A good arrangement is to have the fire box outside the smoke house, with a flue to carry the smoke into the smoke house. When this cannot well be arranged, a fire may be built on the floor of the house, and the meat shielded from heavy smoke by a sheet of tin, about four feet square, placed over the fire between the fire and the meat, about three feet above the floor.

§ 57. THE FUEL

Lychee, or any other hard wood, makes good fuel for smoking meat. Resinous woods, such as pines and cedars, should never be used as they give an objectionable flavor to the meat due to turpentine which they contain.

§ 58. PREPARING MEAT FOR SMOKING

Meat that is to be smoked should be removed from the brine and thoroughly washed in tepid water in order to clean off the coat of pickle that has formed on the surface of the meat. It can then be hung up in the smokehouse, but should be allowed to drain for a day or two before the fire is started. The pieces of meat should be hung so that the air can pass freely between them.

§ 59. THE FIRE

For the first day or two, the fire should be slow, in order that the warming of the meat may be gradual. In clear, dry weather, smoking may continue from the day the smoking begins until it is completed, which should be in one to three weeks, the length of time depending on the size of the pieces of meat and on the weather. When sufficiently smoked, the meat will have a characteristic straw color. Meat should never be smoked on a damp day, because in a damp atmosphere moisture will condense on the meat, and moist meat will not smoke well. Light smoking for two weeks is better than heavy smoking for one week. With a longer period of smoking the smoke will enter the meat more thoroughly.

§ 60. Keeping Smoked Meats

During cool weather smoked meats may be left in the smoke-house for some time after the smoking process is completed. The house should be kept dark in order to keep out flies, and it should be well ventilated so as to prevent dampness. A dry, cool cellar, with free circulation of fresh air, will be a satisfactory place for keeping smoked meats.

If the smoked meat is to be kept only a short time, it needs only to be hung up without covering. For longer keeping, it is well to wrap first in paper, and then in burlap, canvass or muslin, and bury the meat in a grain bin or box of sand. The object of this is to provide a condition which will be uniform in temperature and keep out insects.

A coat of ground pepper, rubbed into the meat before wrapping, will be distasteful to insects.

After smoked meat has become thoroughly dry, it may be wrapped in parchment paper and enclosed in a heavy muslin or canvass, which should be covered with yellow wash or ordinary lime white wash with glue added.

§ 61. Recipe for Yellow Wash

For one hundred pounds hams or bacon, take: three pounds barytes (barium sulphate), .06 pound glue, .80 pound chrome yellow (lead chromate), .40 pound flour, and twelve pounds water.

Put the flour in the water, dissolving all lumps thoroughly. Dissolve the chrome in a quart of water in a separate vessel, and add the solution and the glue to the flour and water. Bring the whole to a boil, and add the barytes slowly, stirring constantly. Make the wash the day before it is required. Stir it frequently when using, and apply with a brush.

Chinese Meat Recipes

62. Bean Sauce Sausage (*Laap Ch'eung* 臘腸).

Sausage is a very popular meat with the Chinese, especially during the winter season. It is probably the most widely used of all cured meats, although as a rule it is quite expensive compared with other meats.

63. Pickle for Bean Sauce Sausage

For every catty of meat, use:

Saltpeter (*siu* 硝) 1 mace* (*ts'in* 一錢)
Salt (*shuk im* 熟鹽) 3 mace (*ts'in* 三錢)
Sugar (*ping fa t'ong* 冰花糖) 2 mace (*ts'in* 二錢)
First-drawn bean sauce (*t'au ch'au yau* 頭抽油) 2 mace
Raw bean sauce, (*shang ch'au yau* 生抽油) 1 mace
Mixture of spices (*ng heung fan* 五香粉) 1 mace

The mixture of spices is made up of the following:

Red pepper (*ch'un tsiu* 春椒) 10 mace
Ground anise seed (*taai wui* 大回) 10 mace
Cloves (*ting heung* 丁香) 10 mace
Cinnamon (*yuk kwai* 玉桂) 10 mace

These spices should be purchased separately and never ready mixed, as ready made mixtures are often worthless.

Sometimes two orange peelings, finely cut or ground, fresh or dried are used for every ten catties of meat. Two mace of double distilled wine (*sheung ching tsau* 雙蒸酒), or treble distilled wine (*saam ching tsau* 三蒸酒), and a wine called (*fan tsau* 粉酒), are sometimes added for each catty of meat. The wine helps preserve the meat.

The above spices should be carefully mixed and the mixture thoroughly stirred into the meat. In mixing the spices the usual method is to use the hands as mixers. A better way is to use a large spoon, or some similar utensil.

* Note: 1 mace = 1/100 ounce; 16 ounces = 1 catty.

§ 64. Preparation of the Meat for Sausage

Use hams, shoulders, chops, fat back, and neck. Sometimes the liver is added to give a dark color. No belly meat or tough parts should be used. Separate the lean from the fat meat. Chop into pieces about one-quarter inch in diameter, or run through a sausage mill. One part fat and one part lean meat is generally used, though the proportion may vary either way, to suit the taste and demand.

§ 65. Sausage Casing (*Ch'eung I* 腸衣)

Sausage casing is generally made from the middle coat of the small intestines of sheep although it is also made from the intestines of the hog. The casing is very thin and transparent. Some casing is prepared in Canton, but most of what is used in Canton comes from Shanghai, as there are comparatively few sheep or goats slaughtered in Canton. The dried casing sells for $3.00 to $6.00 a catty.

§ 66. Softening the Casing

When ready to be used, the casing should be immersed in luke warm water for a few minutes to soften it. If the walls of the casing adhere to each other so that it is difficult for the meat to enter, water should be forced through to distend the casing.

§ 67. Filling the Casing

Insert the small end of the filler (a tin funnel about six inches long) into the end of the casing. Hold the casing tightly to the filler with the left hand, and with the right hand force the meat through the filler into the casing. It is customary to use the hand for this, but a large wooden spoon would work just as well.

A sausage stuffing machine can be purchased for a few dollars, and will do the work of stuffing in a much more satisfactory manner than it can be done by hand. The end of the casing is tied around a tube at the bottom of a jar containing the sausage meat. A disc the size and shape of the inside of the jar is then pressed down on the meat with a lever, and the meat is thus forced into the casing. Such a machine will do the work of five or six men, and if of the right type, can also be used as a lard press. If it is difficult to force the meat into the casing, on account of compressed air, the air should be allowed to escape by punching small holes in the casing with pins. The stuffed casing is usually tied with a string every six inches, cut into convenient lengths, and hung up to dry.

§ 68. SUNNING AND DRYING

The sausage should be prepared in the morning, so that it can be hung up to sun by noon. If it is prepared in the afternoon, there is some danger of its spoiling, especially if the day is not very cold, because it has to be stored over night before it gets much sun. Sunshine and cold north wind are needed to make the best sausage. With five days of wind and sun, the meat becomes hard and firm. In case of rainy or damp weather while the sausage is being dried, it must be hung up in a small room and a small charcoal or wood fire kept burning underneath. If the sausage is not well sunned or dried, it is very likely to spoil, and an effort should be made to get it pretty well dried within five days.

§ 69. SEASON AND WEATHER FOR MAKING SAUSAGE

The time for making sausage is when there is a dry, cold wind blowing from the north. Such weather usually does not occur before the middle of November. From this time to the middle of January is usually the best season. If made earlier, the weather will not be cool enough. If made later, the chances for sunny weather are lessened, and the meat is not apt to cure so well.

§ 70. LEAN PORK SAUSAGE (*Shau Yuk Ch'eung* 瘦肉腸)

This sausage is made the same as ordinary sausage, except that only lean meat is used.

§ 71. LIVER SAUSAGE (*Yun Ch'eung* 潤腸)

In this sausage, duck liver is used instead of lean meat. Otherwise, it is made the same as ordinary sausage.

§ 72. *Tung Koon* SAUSAGE (*Tung Koon Laap Ch'eung* 東莞腊腸)

This is the same as ordinary bean sauce sausage, except that large casings are used. It is not very popular because of its size.

§ 73. OYSTER SAUCE SAUSAGE (*Ho Yau Ch'eung* 蠔油腸)

This is made in the same manner as ordinary sausage, except that oyster sauce (*ho yau* 蠔油) is used instead of bean sauce in making up the pickle.

§ 74. CATSUP SAUSGE

Catsup sausage is the same as ordinary sausage, except that for every catty of meat, three taels of catsup instead of bean sauce are used.

§ 75. ROAST OR BAKED SAUSAGE (*Foh Ch'eung* 火腸)

Prepare ordinary sausage, but use large casings. Dip in honey solution, and bake or roast.

§ 76. CURED HAM

An excellent cured ham is produced in Yunnan Province. This is due to the fact that the hogs in that region are largely of the bacon type, and the climate is very favorable for curing meat, being dry and fairly cool during the meat curing season.

In curing ham, the Chinese use much the same method as is used in western countries in making dry cured ham, except that sugar is not used in the pickle. The pickle is made up as follows: Salt (*shuk im* 熟鹽) 20 catties (*kan* 斤斤), Saltpeter (*siu* 硝) .05 tael (半錢), mixture of spices (*ng heung fan* 五香粉) 2 taels (*leung* 二兩).

Rub each piece of meat for one-half hour. Puncture the meat with needles so the pickle will work in well Rub again in two days. For the two days after the first rubbing with the pickle, keep under pressure to squeeze out the water. After the second two days, rub again with the pickle. Rub again after two more days. Then the meat is packed in salt for fifteen days, when it is taken out and the salt wiped off and the meat is allowed to dry and harden. Curing should require forty days. The flavor improves with age.

§ 77. SUN DRIED PORK (*Shau Laap Yuk* 瘦臘肉)

Sun drying is a common method of curing pork in the Canton region. For this purpose, head, side, ham, and shoulder meat is used. The meat is cut in strips, about eight to ten inches long, and about one inch thick. It is immersed over night in a pickle which is the same as the one used in making sausage, and the next day rubbed with a mixture of honey and water (*mat t'ong shui* 蜜糖水), made up of one part honey and one part water, and hung up to dry

in the sun for two days. Again it is soaked in the pickle for a short time, and dried in the sun for two days. This is done a third time. Then it is put in a stone jar in a cool, dry place for two days, and again hung up to dry for one week, when it is cured. When cured, the fat meat is rather firm.

Pork can be sun dried in the Canton region between the first of November and the middle of January. Dry, north wind is best for curing. If cured later than January, it must be consumed immediately as it will not keep long.

78. Pickled Pig Feet (*Ch'aat T'ai* 札蹄)

In making pickled pig feet, the bone is first removed from the leg, leaving only the meat, skin and toes. Boil, and stuff with roast fat and lean meat to take the place of the bone. Tie up with rice straw, and immerse in the sausage spice for several hours.

79. Pickled Beef

Cut the beef into pieces weighing about four or five taels. Rub each piece thoroughly with salt. Place the meat in a jar and cover with salt. In one or two weeks, the meat is cured and ready to use. Soak in water for one-half hour before using in order to remove part of the salt.

80. Dried Rice Bird (*Laap Woh Fa Tseuk* 腊禾花雀)

Remove the feathers, internal organs, and brain. Then treat same as in making sun dried pork.

81. Pork Stuffed Liver (*Kam Ngan Yun* 金銀潤)

Use the liver of hogs. Cut into strips about one inch wide. Use wine and ginger for flavoring. Half dry it in the wind. It should not be overdried, as it will then be hard to digest. Prepare fat meat by cutting strips of it into such sizes that they can be inserted into the liver. Soak the fat meat in a solution of salt, saltpeter, and sugar, in proportions of 3-2-1. Finally, half dry the fat by hanging in the sun for several hours. With a wooden stick, make pockets in the strips of liver from one end to the other, and insert the strips of fat meat into the pockets. The strips of stuffed liver should then be hung up to dry for a half day.

§ 82. Lo Mei (*Lo Mei* 鹵味)

The tongue, bladder, intestine, and liver, are used in making *lo mei* although any part of the carcass may be used. It is made by cooking the meat for ten minutes and then plunging it while still hot into cold water, cooking for ten minutes again, and then plunging into cold water. The process should be repeated at least twelve times. The expansion and contraction of the meat by such handling makes it very tender, and firm. The process of preparing this meat is called "crossing the river."

The boiled meat should be put into a strong solution of spices prepared before hand, which is the same as the mixture of spices used for making the pickle for sausages. After remaining in the solution of spices over night, the meat is ready to be eaten.

§ 83. Roast Meat (*Shiu Yuk* 燒肉)

Poultry, or pigs weighing up to one hundred catties, frequently are roasted. Two methods are used. Poultry and small pigs may be roasted in pans in an ordinary oven. The other method, which is the one commonly used, is to roast in a special oven. The latter method requires more skill than roasting in the ordinary oven. The oven is in the form of a cylinder stood on end, thirty to forty inches in diameter, and five or six feet high. The poultry or pig is hung on iron bars across the top of the stove, and the stove or oven is then covered with an iron lid. Fire is built at the bottom of the cylinder through an opening at one side. Dry hard wood or charcoal, which give but little smoke, are generally used for fuel. The meat being roasted needs constant attention and shifting so that it will roast through uniformly. It is said that when the meat gives off a white smoke, it is an indication that it is done. A solution made up of one part honey and one part water is rubbed on the meat, both inside and outside the carcass, before the roasting. This honey solution gives the outside of the meat a desirable rich reddish brown color when roasted.

§ 84. Dried Duck (*Laap Aap* 臘鴨)

For one dressed bird, use five taels of salt, which should be well rubbed into the meat. Then pack in salt for one day. Take up, wash off the salt, and put between two bamboo mats. Apply pressure for a few days, and hang up to dry.

The Canton climate is not very favorable for drying duck, as during the meat curing season it frequently rains. If the meat does not dry fairly rapidly, it is likely to spoil. In Naam On, Kwong Sai province, where it is generally dry during the curing season, the ducks are packed away after two days exposure to the sun. In Canton, it often takes two weeks. Ducks' heads, kidneys, feet and other parts of the bird are also cured in the same way.

§ 85. Puffed Pig Skin (*Chue P'ei* 猪皮)

In making puffed pig skin, the pig skin is first cooked, and then thoroughly scraped with a knife in order to remove the oil and fat. It is then hung up in the sun to dry for about ten days. When it is ready for the puffing or blistering process, which is accomplished by roasting the dried skin in hot gravel in a shallow pan over a slow fire This process whitens and puffs, or blisters, the skin.

The puffed pig skin is cut into small cubes and used in soups. It has a spongy appearance with very little taste.

The skin on the hams, shoulders, and sides will puff the best, while the skin on the back, legs, and belly will not puff well on roasting in the hot gravel, but can be puffed by roasting in peanut oil.

On account of dampness and cloudy weather which interfere with proper drying, puffed pig skin is best made during the dry, sunny winter months. The product is on sale, however, throughout the year, as it keeps well if hung in a fairly dry, airy place. It is commonly seen hanging in the front of meat shops in Canton.

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